



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD, SUITE 102
KING OF PRUSSIA, PA 19406-1415

February 19, 2025

David P. Rhoades
Senior Vice President
Constellation Energy Generation, LLC
President and Chief Nuclear Officer
Constellation Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: CONSTELLATION ENERGY GENERATION, LLC, THREE MILE ISLAND
NUCLEAR STATION, UNIT 1 - NRC INSPECTION REPORT NOS.
05000289/2024001 AND 05000289/2024002

Dear David Rhoades:

On December 31, 2024, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection under Inspection Manual Chapter 2561, "Decommissioning Power Reactor Inspection Program," at Three Mile Island Nuclear Station, Unit 1 (TMI-1). Additional inspection activities (in office reviews) were conducted remotely during the inspection period. The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and the conditions of your license. The inspection consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, and plant walk-downs. The results of this inspection were discussed with Trevor Orth, Plant Manager, and other members of your staff on January 13, 2025, and are described in the enclosed report.

On October 25, 2024, Constellation Energy Generation representatives met with NRC staff to discuss your plans to request NRC approval to restart TMI-1 to power operation (ML24346A417). Additionally, Constellation representatives described your plans to request the facility be renamed the "Crane Clean Energy Center." NRC Inspection Manual Chapter (IMC) 2562, "Light-Water Reactor Inspection Program for Restart of Reactor Facilities following Permanent Cessation of Power Operations," documents our processes and requirements to complete inspections related to your request for return of TMI-1 to power operation. In accordance with our guidance, we plan to begin restart related inspections while continuing to complete inspections described in our Decommissioning Power Reactor Inspection Program. Where inspections overlap, we will coordinate for efficiency. Information associated with NRC's oversight of TMI-1 is accessible from the website at <https://www.nrc.gov/info-finder/reactors/tmi1/ccec.html>.

Within the scope of this inspection, no violations of more than minor safety significance were identified.

In accordance with Title 10 of the Code of Federal Regulations (10 CFR) 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure, and your response (if any) will be made available electronically for public inspection in the NRC Public Document Room or from the NRC document system (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>.

D. Rhoades

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To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

No reply to this letter is required. Please contact Nicholas Eckhoff of my staff at (610) 337-5386 if you have any questions regarding this matter.

Sincerely,

Elise Eve, Team Leader
Decommissioning Team
Decommissioning, ISFSI, and Reactor Health
Physics Branch
Division of Radiological Safety and Security

Docket No. 05000289
License No. DPR-50
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Enclosure: Inspection Report
Nos. 05000289/2024001
and 05000289/2024002

SUBJECT: CONSTELLATION ENERGY GENERATION, LLC, THREE MILE ISLAND NUCLEAR STATION, UNIT 1 - NRC INSPECTION REPORT NOS. 05000289/2024001 AND 05000289/2024002 DATED FEBRUARY 19, 2025

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SUNSI Review Complete: NEckhoff

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U.S. NUCLEAR REGULATORY COMMISSION
REGION I

INSPECTION REPORT

Docket No. 05000289

License No. DPR-50

Report Nos. 05000289/2024001 and 05000289/2024002

Licensee: Constellation Energy Generation, LLC (Constellation)

Facility: Three Mile Island Nuclear Station, Unit 1 (TMI-1)

Location: Middletown, PA

Inspection Dates: January 1, 2024 – December 31, 2024

Inspectors: Nicholas Eckhoff, Health Physicist
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Harry Anagnostopoulos, CHP, CSP, Senior Health Physicist
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Approved By: Elise Eve, Decommissioning Team Lead
Decommissioning, ISFSI, and Reactor Health Physics Branch
Division of Radiological Safety and Security

Enclosure

EXECUTIVE SUMMARY

Constellation Energy Generation, LLC
Three Mile Island Unit 1
NRC Inspection Report Nos. 05000289/2024001 and 05000289/2024002

A routine announced decommissioning inspection was completed at Three Mile Island, Unit 1 (TMI-1) on December 31, 2024. A combination of on-site and remote inspection activities was performed over this period. The inspection included a review of activities related to the safe storage of radioactive material, including site operations, engineering, maintenance, plant support activities, management oversight, site radiological programs, and Corrective Action Program (CAP) implementation. Inspectors observed a sample of steam generator examination activities. The inspection consisted of observations by the inspectors, interviews with site personnel, a review of procedures and records, and plant walk-downs. The U.S. Nuclear Regulatory Commission's (NRC's) program for overseeing the safe decommissioning of a shut-down nuclear power reactor is described in Inspection Manual Chapter (IMC) 2561, "Decommissioning Power Reactor Inspection Program."

List of Violations

Based on the results of this inspection, no violations of more than minor safety significance were identified.

REPORT DETAILS

1.0 Background

On September 26, 2019, Constellation sent a letter [Agency Documentation and Management System (ADAMS) Accession Number ML19269E480] to the NRC certifying the permanent cessation of activities and certifying that the fuel had been permanently removed from the reactor. This met the requirements of 10 CFR 50.82(a)(1)(i) and 50.82(a)(1)(ii). On September 20, 2024, Constellation Energy Generation, LLC (CEG) announced their intent to restore Three Mile Island Nuclear Station, Unit 1 (TMI-1) to safe and reliable commercial power operation [ADAMS Accession Number ML24310A104]. As part of their restart activities, CEG is requesting NRC approval to rename TMI-1 to the Crane Clean Energy Center (CCEC).

The NRC's program for overseeing the safe storage and decommissioning of a permanently shut-down nuclear power reactor is described in IMC 2561. The NRC's program for overseeing restart of reactor facilities following permanent cessation of power is described in IMC 2562.

2.0 Active Decommissioning Performance and Status Review

2.1 Inspection Procedures (IPs) 37801, 40801, 64704, 71801, 83750, 84750, and 86750, SAFSTOR inspection

a. Inspection Scope

The inspection consisted of observations by the inspectors, a review of procedures and records, and plant walk downs. The inspectors reviewed the SAFSTOR program as outlined in the Decommissioning Safety Analysis Report (DSAR), Technical Specifications (TS) to assess the adequacy of management oversight for the Unit 1 facility. Specifically, the inspectors reviewed the decommissioning management and staff organization implementation of Unit 1 programs for the SAFSTOR phase of decommissioning. The inspectors also conducted plant walk-downs to assess the material condition of the Unit 1 buildings (reactor building, containment building, and spent fuel pool building).

The inspectors reviewed documentation and performed plant walkdowns to determine if the licensee maintained a Fire Protection Program (FPP) to address the potential for fires that could cause the release or spread of radioactive materials. The inspectors reviewed the fire protection plan to ensure they reflected the current decommissioning status of the facility, and to ensure they had been implemented, as appropriate.

The inspectors reviewed activities and documentation associated with effluent and environmental monitoring programs to determine if the licensee effectively controlled, monitored, and quantified releases of radioactive materials in liquid and gaseous forms to the environment. The inspectors accompanied site personnel on walkdowns of liquid and gaseous monitoring systems and discharge points to assess operability of equipment.

The inspectors reviewed the overall status of the decommissioning trust fund and associated expenses during the inspection period that were used to support decommissioning and spent fuel storage. The inspector reviewed the expenses related to restart activities along with the transition from decommissioning.

The inspectors reviewed activities, components, and documentation associated with the following SAFSTOR programs: decommissioning organization, staffing, and cost controls; safety reviews and modifications; fire protection; maintenance, surveillance.

b. Observations

The inspectors confirmed that the SAFSTOR program had been effectively implemented. The inspectors checked that the maintenance and surveillance program for systems and components had been conducted in accordance with requirements and established procedures. The inspectors confirmed modifications to the site, temporary or permanent, since the last SAFSTOR inspection were performed in accordance with regulatory requirements.

The inspectors determined that the FPP was maintained within NRC requirements and the fire protection plan to minimize the potential for radiological releases in the event of a fire at the plant. The inspectors determined that effluent releases to the environment had been properly controlled, monitored, and quantified as required by NRC regulations. The inspectors determined that the annual radiological effluent and the annual Radiological Environmental Monitoring Program (REMP) reports demonstrated that calculated doses were below regulatory requirements.

The inspectors determined that the overall status of the decommissioning trust fund was being appropriately used to support the decommissioning and spent fuel storage and not for use with restart activities. The inspectors determined that no criteria were met to trigger further NRC review.

Findings or issues identified in audits and staff observations were entered into the CAP at the appropriate threshold. Site staff effectively addressed the issues identified, implemented corrective actions, and tracked them to closure. The condition reports and corrective actions reviewed during the inspection were prioritized and evaluated commensurate with their safety significance.

c. Conclusion

No violations of more than minor safety significance were identified.

2.2 Inspection Procedure 71801, IP 83750, Radiological Aspects of the OTSG Inspection

a. Inspection Scope

The inspectors conducted observations and oversight of the performance of nondestructive testing of the Once-Through Steam Generators (OTSGs). The inspectors reviewed the current status of decommissioning activities with Constellation personnel. The inspectors then evaluated the organization and staffing, which was mobilized by Constellation to support the OTSG inspection efforts. The evaluation included a review of new key milestones and activities that were planned by Constellation in support of a potential unit restart.

The inspectors attended high radiation area briefings which were required to gain access to the reactor building. The inspectors observed support contractor staff while doffing respiratory protective devices and their outer layer of contamination control clothing in the OTSG bullpen step-off pad areas. The inspectors observed Radiation Protection Technicians (RPTs) conducting surveys of personnel and areas for Discreet Radioactive Particles (DRPs) in the OTSG bullpen areas.

The inspectors reviewed the radiation work permit and associated As Low As is Reasonably Achievable (ALARA) plan for the OTSG testing, including a sampling of radiation survey maps and air sample reports. The inspectors evaluated whether Constellation's work planning was commensurate with the risk of the work and included appropriate dose reduction techniques.

The inspectors walked down the OTSG primary side lower bowl and upper handhole access points to evaluate the radiological postings and high radiation area controls.

The inspectors observed the placement of whole-body dosimetry and the use of extremity dosimetry for workers that were directly involved in OTSG testing. The inspectors observed the use of respiratory protective equipment, the use of personal air samplers to evaluate the potential for intakes of radioactive material, and the use of general area air samplers to establish posting requirements for working areas. The inspectors walked down and evaluated the use of portable negative air pressure filtration units and vacuum cleaners, which were established as engineering controls for the OTSG testing activities. The inspectors reviewed the documented results of smoke testing which was conducted by radiation protection staff to verify local air flow velocity and direction for reactor building access points and for the OTSG openings.

The inspectors walked down the placement of continuous air monitors inside of the reactor building and near openings to the reactor building, which were established to provide an early warning of any abnormal release airborne radioactive material.

The inspectors reviewed condition reports that were generated during the NRC's onsite inspection period and evaluated whether Constellation was identifying problems related to decommissioning, OTSG testing, and associated maintenance activities at an appropriate threshold.

b. Observations and Findings

The inspectors observed that pre-job briefings were comprehensive and exhibited active participation by contractor workers, their supervisors, and Constellation staff. The inspectors found the radiological work planning documents and radiological surveys for the OTSG testing to be thorough, legible, and appropriate to the radiological hazards to be expected for the work. The inspectors determined that the use of personnel dosimetry, the application of engineering controls, the evaluation of potential airborne radioactivity, and environmental monitoring were adequate and met regulatory requirements.

c. Conclusion

No violations of NRC requirements were identified.

2.3 Observation of Steam Generator Examination Activities

a. Inspection Scope

Inspectors from the Region I Division of Operating Reactor Safety observed licensee activities and reviewed documents related to their examination of the TMI-1 Once Through Steam Generators (OTSGs). The inspectors observed, on a sampling basis, that licensee staff examined the OTSGs to the standards and procedures that were required in their license when it allowed for plant operation. These requirements were described in their former TMI Unit 1 Technical Specifications and implementing industry technical standards.

The inspectors observed and reviewed documents related to the eddy current examination of the full length of tubes in both TMI-1 OTSG. Documents reviewed included a sample of supporting examination specification technique sheets and implementing procedures. The inspectors were informed some tubes were to be plugged and stabilized in each steam generator comparable to prior examination results. The inspectors observed that licensee staff had further concluded no “in situ” pressure testing of tubes was needed.

The inspectors were informed of activities to examine the secondary side of the Steam Generators (SGs). The inspectors found the OTSG secondary side had been vented to atmosphere during decommissioning and that licensee staff had observed minimal standing water in the SG secondary side, likely from humidity. While the inspectors were onsite, licensee staff were documenting their OTSG examination activities and developing their conclusions. Subsequently on December 19, 2024, the licensee submitted the “TMI-1 Steam Generator Inspection Report for End of Cycle 22” (ML24355A092).

b. Observations and Findings

The inspectors observed OTSG examination activities in May 2024, and noted the results were subsequently provided to the NRC in December 2024.

3.0 Exit Meeting Summary

On January 13, 2025, the inspectors presented the inspection results to Trevor Orth, Site Decommissioning Director, and other members of Constellation’s staff. No proprietary information was retained by the inspectors or documented in this report.

SUPPLEMENTARY INFORMATION
ITEMS OPEN, CLOSED, AND DISCUSSED

None.